APPLICATION FOR LETTERS PATENT
UNITED STATES OF AMERICA

TO ALL WHOM IT MAY CONCERN

Be it known that I, Glen R. Harrelson, residing at 9315 Spinnaker Lane, Gainesville, Georgia 30506 USA, have invented certain new and useful improvements in an

IMPROVED DISPENSING SYSTEM FOR DOUBLE STACK CARTON

of which the following is a specification.

RIVERWOOD INTERNATIONAL CORPORATION
814 LIVINGSTON COURT
MARIETTA, GEORGIA 30067
(770) 644-3228

TITLE OF THE INVENTION

Improved Dispensing System for Double Stack Carton

CROSS-REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of Application Serial No. 10/365,148 entitled, "Improved Dispensing System for Double Stack Carton," filed on February 12, 2003 of which Glen R. Harrelson is listed as the inventor.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to an enclosed paperboard carton capable of enclosing containers in two tiers, which carton has a unique opening and dispensing feature that allows the containers, for example, cans, to be removed or dispensed one container per tier at a time without destroying the overall structural integrity of the carton. The unique opening and dispensing feature can be incorporated in cartons containing a plurality of layers of containers stacked on end and still limit the dispensing to one container per tier at a time. This carton has a unique divider separating the two tiers which facilitates loading the containers in two tiers.

Background

Fully enclosed cartons capable of enclosing cans have been used in the past that have a feature for dispensing the cans one at a time. Dispensers have been provided at various locations on these cartons depending on the design.

Cartons have been introduced into the marketplace that can carry 24 or more containers, for example cans, in two stacks or tiers. So far no satisfactory dispenser has been developed for dispensing the layers of cans in these two stack cartons one at a time from each stack or tier. Consequently, when these cartons are opened they tend to let a number of the cans roll out which has not allowed these twin stack cartons to achieve their full potential.

INCORPORATION BY REFERENCE

This application incorporates by reference Application Serial No. 10/365,148 entitled "Improved Dispensing System for Double Stack Carton," filed on February 12, 2003.

SUMMARY OF THE INVENTION

It is an object of this invention to develop a dispenser for dispensing containers, for example cans, one at a time from a carton containing containers in two stacks or tiers. It is the further object of this invention to develop a dispenser that can be easily opened. A further object of this invention is to develop a dispenser that can be used for containers stacked in a 3 by 4 configuration in each stack to be dispensed one at a time from each stack without the containers rolling out accidentally. Another object of this invention is to develop a dispenser for a twin stack carton that does not destroy the structural integrity of the carton when it is opened. It is a further object of this invention to develop a divider for separating the two tiers of containers to facilitate loading the containers into the carton from either the end where the dispenser is located or the other end of the carton.

Briefly described, in its preferred form, the objects of this invention are achieved by providing an enclosed carton for carrying containers in two tiers for dispensing the containers one at a time from each tier from the exiting end of the carton. The carton is generally rectangular and has a bottom, top, two sides, a closed end and exiting end. The carton is foldably constructed from a blank having panels and flaps. The carton is designed to carry containers, e.g. cans, that are stacked on their ends in two tiers from the bottom panel to the top panel. The dispenser is constructed by providing tear lines in one of the side panels that extend into the exiting end of the carton which is rested on the other side panel, with the dispenser being capable of dispensing the containers as they are resting on their sides. A tear line is provided in the end of the carton placed from the side upon which the carton rests while dispensing containers at a sufficient distance to prevent any of the containers below the top layer of containers from rolling out of the carton when the dispenser is open. A pair of tear lines extend from this bottom tear line from each end at an angle from the bottom tear line to the top side panel in which part of the dispenser is formed. The angle and distance of the projection is such as to restrain the top

layer of cans in each tier from accidentally rolling out. The dispenser is constructed with a large enough opening in the top side panel in which it is formed to permit a person to grasp and remove a container in each tier one at a time.

This carton can be designed with a dispenser dispensing containers in a 3 by 4 configuration in each tier. The bottom tear line is located so as to prevent the bottom layers of containers from rolling out of the carton. A pair of tear lines extending from the ends of the bottom tear line are placed at an angle designed to restrain containers in the top layer from rolling out of the carton.

Because these two tiers of containers, such as cans, are loaded into one end of the carton after it has been formed from a blank and glued into a sleeve, a divider is desirable between the two tiers of containers to facilitate loading the containers into an end of the carton. The divider basically provides a surface on which the cans in the top tier can be loaded into the carton. Because both ends of the carton are open when the cans are loaded into the carton, a portion of the divider must be folded down immediately adjacent to the containers in the bottom tier on the end of the carton into which the containers are loaded. Otherwise, the two tiers of containers might not be properly aligned in the carton. Since these containers, such as cans, can be loaded from either the dispensing end or the non-exiting end of the carton, it is necessary to have some provision so the folded down end of the dispenser does not interfere with the dispensing of containers from the dispensing end when the folded down end of the divider is located adjacent the dispensing, or exiting end, of the carton. This is accomplished by placing a slit in the end of the divider that is to be located adjacent the dispensing end of the carton. Since it may not be known from which end the carton may be loaded, it is preferable to have the slit on each end of the divider. If the folded down end of the divider is located adjacent the dispenser, the portion of the dispenser on the side of the slit adjacent the dispenser opening can be moved to one side so that containers in the other tier can be removed without being impeded by the divider. Since the containers are dispensed while the carton is resting on a bottom side panel, the slit in the divider should be located so that it can be moved back and forth from one side of the dispenser to the other in order that containers may be removed from each tier of containers.

The divider of this invention can be utilized with dispensers other than those described above.

Preferably the exiting end of the carton has four flaps for closing this end. An end flap attached to the side of the carton on which it is resting while the containers are being dispensed is generally not removed and serves to restrain one or more of the bottom layers of containers from rolling out of the carton. Preferably the tear lines in the end flaps attached to the top panel, and bottom panel are constructed so that a portion of each of these flaps is not removed and are glued to the flap attached to the side panel on which the carton rests during dispensing to preserve the integrity of the carton.

Other objects, features and advantages of this invention will become apparent upon reading the following specification, when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the carton of this invention showing the bottom tier of cans placed in the carton, and showing a plan view of the divider, which shows its position for inserting into the carton.

FIG. 2 is a perspective view of the carton of FIG. 1 in which the divider has been inserted on top of the first tier of cans.

FIG. 3 is a perspective view of the carton into which both tiers of cans have been inserted with the carton resting on its bottom side panel with the dispenser flap having been torn open and removed exposing the dispenser opening.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is intended primarily for use with cans of the types used to contain soft drinks, beer and the like. The blank for forming the carton of this invention is illustrated and described in detail in U.S. Application Serial No. 10/365,148 which has been incorporated by reference. Numbers less than 100 used to describe parts of the carton in that application are used in this application. Numbers above 100 are used to describe features not disclosed, or not disclosed in detail, in that application.

FIG. 1 illustrates the carton having been formed from a blank and glued together and formed into an open ended sleeve. As shown in FIG. 1 the bottom panel 18 is shown in the top position, but it should be understood that the carton can be loaded with the bottom panel 18 in the bottom position. The divider 110 is shown in the proper position for insertion into the carton. Phantom lines 112 showing the location of the cans in the second tier are illustrated on divider 110. The divider 110 has a width W slightly less than the width W' of the carton so that the divider can be inserted into the carton. The width W of the carton between the bottom side panels 14 and 22 as shown in FIG. 1 is approximately equal to the sum obtained by multiplying the diameter of the container by the number of layers in a tier. The divider 110 can be inserted into the carton as illustrated in FIG. 2. The cans C can be inserted into the carton and placed on top of the divider 110 or the cans C can be placed on the divider 110 and inserted into the carton together. The divider has a length L as illustrated in FIG. 1 that is slightly greater than the length L' of the carton. The length L of the carton as shown in FIG. 1 is approximately the sum of the diameters of containers in a layer.

When the divider 110 is being inserted into the carton either with or without cans on it, the top end 122 of the divider 110 is folded down along with the bottom end 124 of the divider along fold line 120. A slit 114 is placed between top end 122 and bottom end 124 of the divider 110. As illustrated in FIG. 2, the fold line 120 is placed so that the divider 110 rests on the bottom tier 130 of the cans. In this case, the cans are being loaded through the exiting end, or dispensing end, 132 of the carton. It will be noticed that the non-exiting ends 126 and 128 of the divider do not extend beyond the end can C4. The fold line 120 is placed in the divider 110 so that the remainder of the divider 110 just covers the bottom tier of cans 130 in the carton. Fold line 118 is placed in a similar position in the divider 110, and in case that end of the divider is inserted last the non-exiting ends 126 and 128 of the divider would be turned down to properly locate the divider 110 in the carton. Slit 116 is placed between non-exiting ends 126 and 128 of the divider 110.

A handle (not shown) may be provided for carrying the carton.

The various end flaps of the carton can then be closed and sealed with glue in the conventional fashion. To use the end of the carton where the dispenser is located as an

example, the top side flap 42 is folded inwardly, bottom side flap 54 is folded inwardly, bottom end flap 50 is folded in an overlapping position, and glued to top side flap 42 and bottom side flap 54. Outside top end flap 34 and inside top end flap 58 are glued together to form a single top end flap which is likewise glued to top side flap 42 and bottom side flap 54. The other end of the carton is closed in the same manner.

FIG. 3 illustrates the carton that has been loaded with cans and turned 90 degrees so that it rests on bottom side panel 22. FIG. 3 illustrates the dispenser flap 68 having been opened exposing a dispenser opening 134. The dispenser flap 68 is partially formed in top side panel 14 as shown by tear line 70. It has been torn open as illustrated FIG. 3.

When the dispenser is opened, dispenser flap 68, which includes top side flap 42, is removed from the carton along with a portion of outside end flap 34 and bottom end flap 50 along tear line 70. It will be noticed that this carton has end retention projections 84 and 86 for holding cans in layers L2 and L3 from rolling out of the carton automatically once the dispenser flap 68 has been removed. The bottom tear line 96, which is torn open when the dispenser flap 68 is removed, needs to be located so that cans in the bottom layer L1 do not automatically roll out of the carton when the dispenser flap 68 has been removed. It will be noticed top end 122 of the divider 110 and the bottom end 124 of the divider 110 have been folded when the exiting end 132 of the carton is closed. Once a dispenser flap 68 is removed, the top end 122 of the divider 110 is an impediment to the removal of cans from the carton. The provision of slit 114 in the divider 110 permits the top end 122 of the divider 110 to be moved to the right so that can C3 can be removed. Likewise, the top end 122 of the divider 110 can be moved to the left allowing the removal of can C4 from the carton. It should be noted that slit 114 needs to be located in relation to bottom tear line 96 so the movement of top end 122 of the divider 110 is not impeded. In other words, the slit 114 should be located so that the top end 122 of the divider 110 can easily be moved to the right or to the left. Alternatively, a person may tear the top end 122 of the divider 110 off.

The divider 110 of this invention can be used for other types of dispensers where containers are stacked in two tiers. While the carton is illustrated as containing 24 cans, the carton can be designed to carry a different of multiple of cans.

While the invention has been disclosed in its preferred forms, it will be apparent to those skilled in the art that many modifications, additions, and deletions can be made therein without departing from the spirit and scope of the invention and its equivalents as set forth in the following claims.